

Coating, Printing, Aerospace & Metal Finishing Team

PERMIT APPLICATION EVALUATION

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WW SMKE

Date 4/26/11

PERMITS TO CONSTRUCT

New Flexographic Heat-Set Press

Applicant's Name: *Graphic Packaging International, Inc*

Facility ID: 157259

Mailing Address: 1600 Barranca Pky, Irvine, CA 92606 Equipment Address: 1600 Barranca Pky, Irvine, CA 92606

EQUIPMENT DESCRIPTION

A/N (521383) - Title V permit revision

Deminimus significant permit revision

A/N 521382 (NEW)

FLEXOGRAPHIC PRINTING SYSTEM CONSISTING OF:

- 1. FLEXOGRAPHIC PRINTING PRESS, ROBINETTE, TWO COLOR, 68" WIDTH, WEB FED.
- 2. DRYER, WITH A 1,600,000 BTU PER HOUR NATURAL GAS FIRED ECLIPSE MINNOX LOW NOX BURNER, WITH ONE 1/3 HP COMBUSTION AIR BLOWER AND ONE 15 HP EXHAUST FAN.

A/N 521762

Administrative change of condition to A/N 490167, PO# G3373 to operate the following:

LITHOGRAPHIC PRINTING SYSTEM CONSISTING OF:

- 1. PRESS, PLANETA MODEL 557P, SEVEN COLOR, 55 INCH SHEET WIDTH, WITH ONE 95 H.P. MAIN DRIVE (275 TOTAL PRESS H.P.)
- 2. INFRARED DRYER, GRAPHIX, 42" W. X 55" L. X 8" H., 62 KW, WITH FOUR ½ H.P. CIRCULATING FANS AND THREE 2 H.P. EXHAUST FANS.
- 3. ULTRA VIOLET DRYER, UV MAN 1ST, TYPE U-1000-3-BOD, 24" W. X 55" L. X 8" H., 19 KW, WITH TWO 1 H.P. EXHAUST FANS.

To remove the wash solvent composite VOC vapor pressure limit condition.



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A/N 521763

Administrative change of condition to A/N 490173, PO# G3378 to operate the following:

LITHOGRAPHIC PRINTING PRESS, KOMORI, MODEL L650-111, 6 COLOR, SHEET FED, 50" SHEET WIDTH, 146.7 H.P. TOTAL DRIVE MOTORS, WITH A 127 KW INFRARED DRYING SYSTEM, AND A 62 KW ULTRAVIOLET CURING SYSTEM

To remove the wash solvent composite VOC vapor pressure limit condition.

<u>A/N 521764</u>

Administrative change of condition to A/N 490179, PO# G3380 to operate the following:

LITHOGRAPHIC PRINTING PRESS, KBA-PLANETA, MODEL 162-7, 7 COLOR, SHEET FED, 64" SHEET WIDTH, WITH INFRARED DRYER, 122 KW.

To remove the wash solvent composite VOC vapor pressure limit condition.

Conditions (Flexographic heatset press)

- 1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
- 2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.
- 3. THIS EQUIPMENT SHALL BE OPERATED IN COMPLIANCE WITH RULES 1130 AND 1171.
- 4. THE TOTAL VOLATILE ORGANIC COMPOUND (VOC) EMISSIONS FROM THIS FACILITY SHALL NOT EXCEED 2,165 POUNDS IN ANY ONE DAY. (FACILITY CONDITION)
- 5. THE TOTAL QUANTITY OF VOC EMISSIONS FROM THIS EQUIPMENT SHALL NOT EXCEED 1000 POUNDS IN ANY ONE DAY.
- 6. IN ADDITION TO THE RECORD KEEPING REQUIREMENTS IN RULE 109, THE OPERATOR SHALL KEEP ADEQUATE RECORDS FOR THIS EQUIPMENT TO VERIFY THE DAILY VOC EMISSIONS IN POUNDS, AND THE VOC CONTENT OF EACH MATERIAL AS APPLIED INCLUDING WATER AND EXEMPT COMPOUNDS. ALL RECORDS SHALL PREPARED IN A FORMAT WHICH IS ACCEPTABLE TO THE DISTRICT, SHALL BE RETAINED ON THE PREMISES FOR A PERIOD OF FIVE



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YEARS AND BE MADE AVAILABLE UPON REQUEST OF THE EXECUTIVE OFFICER OR HIS REPRESENTATIVE.

- 7. MATERIALS USED IN THIS EQUIPMENT SHALL NOT CONTAIN ANY TOXIC AIR CONTAMINANTS IDENTIFIED IN RULE 1401, TABLE I, WITH AN EFFECTIVE DATE OF SEPTEMBER 10, 2010 OR EARLIER, WITH THE EXCEPTION OF AMMONIA (CAS# 7664-41-7).
- 8. MATERIAL SAFETY DATA SHEETS FOR ALL MATERIALS USED AT THIS FACILITY AND SUBJECT TO DISTRICT RULES SHALL BE KEPT CURRENT AND MADE AVAILABLE TO DISTRICT PERSONNEL UPON REQUEST.
- 9. THE OXIDES OF NITROGEN (NOx) EMISSIONS DISCHARGED FROM THIS EQUIPMENT SHALL NOT EXCEED 30 PPM, CALCULATED AS NO₂ BY VOLUME ON A DRY BASIS @ 3% OXYGEN, AVERAGED OVER 30 CONSECUTIVE MINUTES.
- 10. THE OWNER OR OPERATOR OF THIS EQUIPMENT SHALL CONDUCT A SOURCE TEST TO VERIFY COMPLIANCE WITH CONDITION NO. 9 AND RULE 1147 UNDER THE FOLLOWING CONDITIONS:
 - A. THE TESTS SHALL BE CONDUCTED WITHIN 45 DAYS AFTER DISTRICT APPROVAL OF THE SOURCE TEST PROTOCOL.
 - B. THE TESTS SHALL MEASURE NOX, CO, OXYGEN CONTENT, MOISTURE CONTENT, TEMPERATURE, AND THE EXHAUST FLOW RATE AT THE OUTLET OF THIS EQUIPMENT, AT THE NORMAL OPERATING LOAD, USING THE APPROPRIATE TEST METHODS SPECIFIED IN RULE 1147. THE REPORT SHALL PRESENT THE EMISSION DATA IN POUNDS PER HOUR, AND PARTS PER MILLION ON A DRY BASIS CORRECTED TO 3% OXYGEN.
 - C. IN CASE THIS EQUIPMENT OPERATES WITH VARIABLE HEAT INPUT THAT MAY FALL BELOW 50% OF THE RATED HEAT INPUT CAPACITY DURING NORMAL OPERATION, A TEST SHALL ALSO BE CONDUCTED AS SPECIFIED IN SECTION B OF THIS CONDITION ABOVE, BUT USING A HEAT INPUT OF LESS THAN 25% OF THE RATED HEAT INPUT OF THIS EQUIPMENT, PURSUANT TO RULE 1147(d)(1).
 - D. A WRITTEN NOTICE OF THE SOURCE TEST DATE SHALL BE SUBMITTED OT THE DISTRICT (ADDRESSED TO THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT, ATTN: WILMA WILSON, ENGINEERING & COMPLIANCE, 21865 COPLEY DRIVE) AT LEAST 14 DAYS PRIOR TO THE SOURCE TEST DATE SO THAT AN OBSERVER FROM THE DISTRICT MAY BE PRESENT.



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E. A TESTING LABORATORY CERTIFIED BY THE CALIFORNIA AIR RESOURCES BOARD IN THE REOUIRED TEST METHODS FOR CIRTERIA POLLUTANTS TO BE MEASURED, AND IN COMPLIANCE WITH DISTRICT RULE 304 (NO CONFLICT OF INTEREST) SHALL CONDUCT THE TEST.

- SAMPLING FACILITIES SHALL COMPLY WITH THE DISTRICT GUIDELINES FOR 11. CONSTRUCTION OF SAMPLING AND TESTING FACILITIES PURSUANT TO RULE 217. TWO COMPLETE COPIES OF THE SOURCE TEST REPORTS SHALL BE SUBMITTED TO THE DISTRICT WITHIN 45 DAYS AFTER THE SOURCE TESTING DATE. THE SOURCE TEST REPORT SHALL INCLUDE, BUT NOT BE LIMITED TO, ALL TESTING DATA REQUIRED BY THIS CONDITION.
- 12. A SOURCE TEST PROTOCOL SHALL BE SUBMITTED TO THE DISTRICT (ADDRESSED TO SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT, ATTN: WILMA WILSON, ENGINEERING & COMPLIANCE, 21865 COPLEY DRIVE, DIAMOND BAR, CA 91765) NO LATER THAN 30 DAYS FROM THE DATE THIS PERMIT IS ISSUED, UNLESS OTHERWISE APPROVED IN WRITING BY THE DISTRICT. THE TEST PROTOCOL SHALL BE APPROVED IN WRITING BY THE DISTRICT BEFORE THE TEST COMMENCES. THE TEST PROTOCOL SHALL INCLUDE THE COMPLETED DISTRICT FORMS ST-1 AND ST-2 SPECIFYING THE PROPOSED OPERATING CONDITIONS OF THE EQUPMENT DURING THE TEST, IDENTITY OF THE TESTING LABORATORY, A STATEMENT FROM THE TESTING LABORATORY CERTIFYING IT MEETS THE CRITERIA IN DISTRICT RULE 304(k), AND A DESCRIPTION OF THE SAMPLING AND ANALYTICAL PROCEDURES TO BE USED.
- 13. TWO COMPLETE COPIES OF THE SOURCE TEST REPORTS SHALL BE SUBMITTED TO THE DISTRICT (ADDRESSED TO SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT, ATTN: WILMA WILSON, ENGINEERING & COMPLIANCE, 21865 COPLEY DRIVE, DIAMOND BAR, CA 91765) WITHIN 30 DAYS AFTER THE SOURCE TESTING DATE. THE SOURCE TEST REPORT SHALL INCLUDE, BUT NOT BE LIMITED TO, ALL TESTING DATA REQUIRED BY THIS PERMIT.



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BACKGROUND

Graphic Packaging International (GPI) submitted A/N 521382 on 4/15/11 to install a new flexographic heat-set press. This press will have an equipment cap of 100 lb/day VOC and will operate under the existing facility limit of 2165 lb/day of VOC. Therefore, this project will not result in any VOC emission increase from the facility. The new press will have a 1,600,000 Btu/hr low NOx burner (30 ppm NOx). There will be combustion emissions from the new press dryer. The company also submitted three applications on 4/28/11 for administrative change of condition to remove the BACT condition limiting wash solvent composite VOC vapor pressure since they comply with the alternative low VOC content ≤ 100 g/l BACT requirement. This change will not result in any VOC emission increase from the facility. Since Rule 1171 now requires 100 g/l VOC washes, a specific BACT condition for washes is not necessary.

GPI is a Title V facility. A Title V deminimis significant permit revision application (A/N 521383) was also submitted with this application. This is the fourth revision to the TV renewal permit issued to previous owner Smurfit-Stone Container on 6/18/2006. This revision will also include the administrative permit revision to change the responsible official, remove some equipment from section D and convert two P/Cs to P/O as requested by GPI (see Reg XXX evaluation).

The District compliance data base does not show any NOV, NC or complaints for this facility. The inspector visited the facility on 7/13/10 and found the facility in compliance.

PROCESS DESCRIPTION

GPI specializes in the production of packaging boxes for various commercial products. The majority of the boxes are made with soft cardboard stock with graphics printed externally by the lithographic printing presses. Labels are printed on the flexographic press.

EMISSION CALCULATIONS

The facility is operating under an emission cap of 2165 lbs/day of VOC and this new press will be limited to 1000 lb/day (to keep HIA & HIC <1 from ammonia in coatings and inks). The oven will have an Eclipse Minnox low NOx burner < 30 ppm NOx @ 3% O_2 and there will be a small amount of combustion emissions.

Operating schedule: 24 hrs/day, 5 days/wk, 52 wks/yr (maximum)

NSR - VOC: $1000 \text{ lb/day} \div 24 \text{ hr/day} = 41.7 \text{ lb/hr (maximum R1 & R2)}$

30 day average = 0 (bubble)



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Summary of emissions from the flexo oven combustion of natural gas:

NOx		C	9	PM/PM_{10}		
lb/hr	lb/day	lb/hr	lb/day	lb/hr	lb/day	
0.059	1.4	0.053	1.28	0.011	0.27	

^{*}see attached spreadsheet for combustion emissions calculations.

Toxics:

The WB coating contains 3.61% ammonium hydroxide and 28% is ammonia.

= 28% X 3.61% = 1.01%

Density

= 9.18 lb/gal

Assuming 360 gal/day of coating

 $= 9.18 \text{ lb/gal} (1.01\% \text{ NH3})(720 \text{ gal/day})(\frac{\text{day}}{24 \text{ hrs}})$

= 33.4 lb/day, 1.4 lb/hr

The inks contain 0.21% ammonia.

Density

= 8.8 lb/gal

Assuming 1000 gal/day of ink

 $= 8.8 \text{ lb/gal} (0.21\% \text{ NH3})(1000 \text{ gal/day})(\frac{\text{day}}{24} \text{ hrs})$

= 18.5 lb/day, 0.8 lb/hr

There are no other Rule 1401 TACs in the materials used in the press. There are small quantities of TACs from the combustion of natural gas in the oven (see attached spreadsheet).

RULE EVALUATION

RULE 212(c)(1)

This section requires a public notice for all new and modified permit units that may emit air contaminants located within 1,000 feet from the outer boundary of a school.

Since there are no schools within 1,000 feet of the facility, a public notice will not be required by this section.

RULE 212(c)(2)

These sections require a public notice for all new and modified equipment and facilities which have on-site emission increases exceeding any of the daily maximums specified in subdivision (g).

There will be an increase in emissions from the dryer from combustion of natural gas. The following table summarizes the emission limits and increases. There is no increase in VOC from the facility since this equipment will be operated within the existing VOC facility cap of 2165 lb/day. Since the



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increases are below the thresholds, public notice will not be required by this section.

LB/DAY	СО	NOX	PM10	ROG	LEAD	SOX
Max Limit	220	40	30	30	3	60
Increases	1	1	0	0	0	0

RULE 212(c)(3)

This section requires a public notice for all new or modified permit units with increases in emissions of toxic air contaminants listed in Table I of Rule 1401 resulting in MICR greater than $1E^{-6}$ per permit unit or greater than $10E^{-6}$ per facility.

There is a small quantity of toxic contaminants emissions calculated of TAC listed in Rule 1401 with an effective date of 9/10/10 or earlier from the combustion of natural gas and use of coatings and inks (contain some ammonia). The MICR is less than one in a million and HIA/HIC below one. The proposed project is expected to comply with all applicable R1401 requirements. Public notice will not be required per this section.

RULE 212(g)

This section requires a public notice for all new and modified sources that have equipment emission increases exceeding any of the daily maximum as specified by Rule 212 (g).

The emissions increase from the equipment will exceed the daily maximum limits specified by Rule 212(g). Therefore, public notice will be required by this section.

	<u>ROG</u>	$NO_{\underline{x}}$	<u>PM₁₀</u>	$\underline{SO_2}$	<u>CO</u>	<u>Pb</u>
Per Equipment	1000	1	0	0	1	0
MAX MDC Limit (lb/day)	30	40	30	60	220	3
Required Public Notice	YES	No	No	No	No	No

RULE 401 Visible Emissions

Visible emissions are not expected with proper maintenance and operation of this equipment. The system shows no visible emissions complaints at this location for similar presses.

RULE 402 Nuisance

Operation of this equipment is not expected to create complaints or nuisance with proper maintenance and operation. The system shows no nuisance complaints at this location for similar presses.



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RULE 1130

Graphic Arts

This operation will use low-VOC inks and coatings which comply with the rule.

Material	Rule 1130 VOC Limit	Actual VOC Content		
Flexo Inks-porous substrate	225 g/l (1.87 lb/gal) of coating	0.1 - 1.75 lb/gal of coating		
Coatings	300 g/l (2.5 lb/gal) of coating	0.03-0.5 lb/gal of coating		

RULE 1171

Solvent Cleaning Operations

Hot water and acetone will be used to clean the flexographic printing system and other general cleaning operations. Compliance is expected.

RULE 1147

NOx Reductions

This equipment will be equipped with a low NOx burner which is expected to emit less than the rule limit of 30 ppmv NOx at 3% O₂. A source test will be conducted to verify compliance. Therefore, compliance is expected.

REG XIII

Rule 1303(a), Best Available Control Technology (BACT)

BACT is met by use of low VOC inks with VOC contents less than 1.5 lb/gal coating (less water and es). In addition, the oven will be equipped with a low NOx burner expected to meet 30 ppm NOx @ 3% O₂.

Rule 1303 (b)(1), Modeling

The calculated values for the combustion emissions are less than the screening limits in Table A-1, therefore no further modeling analysis is required

A/N	NOx (1	lbs/hr)	CO (lb	s/hr)	PM10 (lbs/hr)		
<2MM BTU/hr	Allowed	Actual	Allowed	Actual	Allowed	Actual	
521382 – flexo	0.20	0.06	11.0	0.05	1.2	0.011	

Rule 1304 (c)(1), Offsets Exemption

The new press will have an equipment cap of 1000 lb/day VOC and will operate under the existing facility limit of 2165 lbs VOC/day. Therefore, there is no VOC emission increase from this facility, offsets for VOC are not required. NOx and CO emissions from combustion of natural gas in the oven are 1 lb/day each. NOx and CO emissions are exempt from offsets under 1304(d)(2) since the facility is less than 4 tpy NOx and 29 tpy CO.



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RULE 1401 New Source Review of Toxic air Contaminants

There will be no carcinogenic compounds in the materials used in this equipment. However, the inks and coatings contain ammonia which is an acute and chronic TAC. The facility has requested a 1000 lb/day VOC equipment cap to limit ammonia emissions so HIA and HIC are below 1 to comply with this rule. There will be a small amount of carcinogenic, acute and chronic TACs emitted from the combustion of natural gas in the oven. Attached screening risk analysis shows MICR less than 1 X 10⁻⁶ and HIA/HIC are below one. Compliance is expected.

REG XXX

This facility is not in the RECLAIM program. The proposed project is considered as a "de minimis significant permit revision" to the Title V permit for this facility.

Rule 3000(b)(6) defines a "de minimis significant permit revision" as any Title V permit revision where the cumulative emission increases of non-RECLAIM pollutants or hazardous air pollutants (HAPs) from these permit revisions during the term of the permit are not greater than any of the following emission threshold levels:

Air Contaminant	Daily Maximum (lbs/day)
HAP	30
VOC	30
NOx	40
PM10	30
SOx	60
СО	220

To determine if a project is considered as a "de minimis significant permit revision" for non-RECLAIM pollutants or HAPs, emission increases for non-RECLAIM pollutants or HAPs resulting from all permit revisions that are made after the issuance of the Title V renewal permit shall be accumulated and compared to the above threshold levels. Since the cumulative emission increases resulting from all permit revisions are not greater than any of the emission threshold levels, this proposed project is considered as a "de minimis significant permit revision". This proposed project is the 4th permit revision to the Title V renewal permit issued to the original operator Smurfit Stone Container on 6/18/06, which went through a change of operator to Bluegrass Folding Carton and issued a Title V permit on 10/11/06. This revision will include the conversion of 2 P/Cs and P/Os and the removal of some equipment from Section D, and change of responsible official in Section A as noted below. The following table summarizes the cumulative emission increases resulting from all permit revisions since the last Title V renewal permit was issued:



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Revisions since Renewal	HAP	VOC	NOx	PM_{10}	SOx	CO
(1 st) Revision - (administrative): change of operator from Smurfit-Stone Container (ID# 007089) to Bluegrass Folding Carton (ID# 148535) issued 10/11/06 (Revision 0).	0	0	0	0	0	0
(2 nd) Revision - (administrative): change of operator from Bluegrass Folding Carton (ID 148535) to Graphic Packaging Int'l (ID 157259) & -(deminimis significant) add two lithographic printing presses (Revision 0)	0	0	0	0	0	0
(3rd) Revision - (deminimis significant) add flexographic heat-set printing press (A/N 490182) to replace A/N 490168 in future. Add winder jogger A/N 501988 to replace A/N 490172 in future –P/Cs. Also remove paperboard scrap collection and baling system under permit P/O G3375 (A/N 490170) since it is now exempt from written permit under Rule 219(p)(10)	0	0	0	0	0	0
(4th) Revision - Deminimis Significant: Add new flexographic heat-set printing press (A/N 521382) and change of condition for 3 litho presses A/Ns 521762, 521763 and 521764 Administrative: convert P/Cs for a litho press (A/N 490184) and winder jogger (A/N 501988) to P/O; cancel P/Cs for one flexo press (A/N 490182) and one litho press (A/N 490185) and remove from Section D; remove winder jogger under A/N 490172, P/O G3377 (replaced by winder jogger A/N 501988); and remove two flexo presses under A/N 490168, P/O G3374 and A/N 490171, P/O G3376 (removed from service) from Section D, and change responsible official in Section A	0	0	1	0	0	1
Cumulative Total since Renewal (6-18-06)	0	0	1	0	0	1
Maximum Daily Limit	30	30	40	30	60	220

RECOMMENDATION

The proposed project is expected to comply with all applicable District Rules and Regulations. Since the proposed project is considered as a "de minimis significant permit revision", it is exempt from the public participation requirements under Rule 3006 (b). This revision will also include administrative revision to convert two P/Cs to P/Os and remove some equipment. A proposed permit incorporating these permit revisions will be submitted to EPA for a 45-day review pursuant to Rule 3003(j). If EPA does not have any objections within the review period, and upon completion of the Rule 212 public notice distribution and 30-day comment period, a revised Title V permit (Sections A and D) will be issued to this facility with the addition of a Permit to Construct for the new heatset flexographic printing press, change of condition for three litho presses (A/N 521762-764), convert two P/Cs to P/Os for a winder-jogger and litho press (A/Ns 490185 & 501988), removal of P/Cs for a flexo and litho press (A/Ns 490182 and 490185), and removal of P/Os for old winder-jogger (A/N 490172) and 2 flexo presses (A/N 490168 and 490171) from Section D, and change the responsible official in Section A.